HF TRANSCEIVER

X108

USER'S MANUAL

XIEGU TECH

V1.1

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Important reminder:

Before operating the equipment, please read our operating manual carefully and keep the manual, so as not to lose.

Features:

- Low noise, single conversion HF transceiver . Double balanced diode mixer for extended dynamic range.
- 0.2μV receive sensitivity (preamp on).
- Narrow band double tuned bandpass filters covering all HF amateur frequencies including WARC bands.
- IF channel AGC for constant gain， at least provides 95db dynamic range.
- High performance narrow band IF crystal filter with shape factor up to 1.7
- Optional NB module
- Optional front and rear handles

Security considerations:

Do not use equipment during a lightning storm.

Damp-proof !

Don't illegal operations!

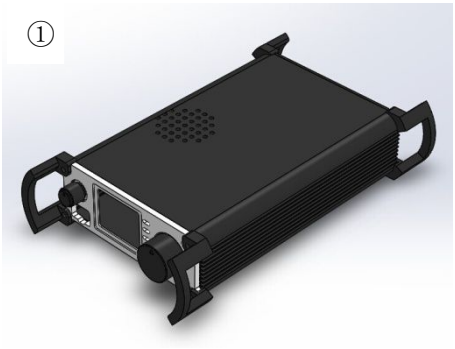
Note RF high-voltage of antenna connector!

vanning list:

Qty

① The main engine of the X 108.....1
② Power supply cable.....1
③ Hand microphone.....1
④ USB Cable.....1
⑤ Service card.....1

①



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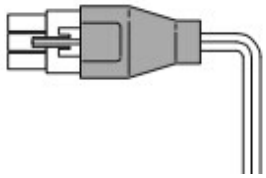

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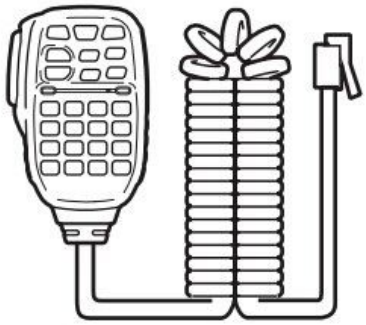


⑤

一、Machine parameters

Basic parameters

Frequency range: Receive: 0.5~30MHz（Continuous）
Transmitting: All HF Amateur bands including WARC bands

Operating mode: SSB（J3E）
CW （A1A）
AM （A3E）

minimum frequency stepping: 1Hz

Antenna impedance: 50Ω

Operating temperature range: -10℃ ~ +60℃

Frequency stability: ±1.5ppm @ Open the power about 1 minute，-10℃~+60℃（Standard Edition）
±0.5ppm @ Open the power about 1 minute , -10℃~+60℃（TCXO-M，Matching）

Operating voltage: 12~14.5V DC

Current draw: Receiving: 600mA
Transmitting: 7.5A Max

Dimensions (mm): 120*45*180（mm） [Does not include the Front and rear handles and the Knob etc bulge.]

Transmitter parameters

Transmitter power：

Modulation mode: SSB balanced modulation:
AM Low level modulation

Spurious response rejection: ≥40dBc

Carrier suppression： ≥45dBc

IF filter： SSB 2.4kHz(-6dB)
CW 500Hz(-6dB)

Receiving parameters

IF Frequency: 10.7MHz

receive sensitivity: 0.2uV

Receive Frequency bands: 1.8~2.0MHz
3.5~4.0MHz
5.0~5.5MHz
7.0~7.3MHz
10.0~10.2MHz
14.0~14.5MHz
18.0~18.2MHz
21.0~21.6MHz
24.8~25.0MHz
28.0~28.8MHz
0.5~30.0MHz （*）

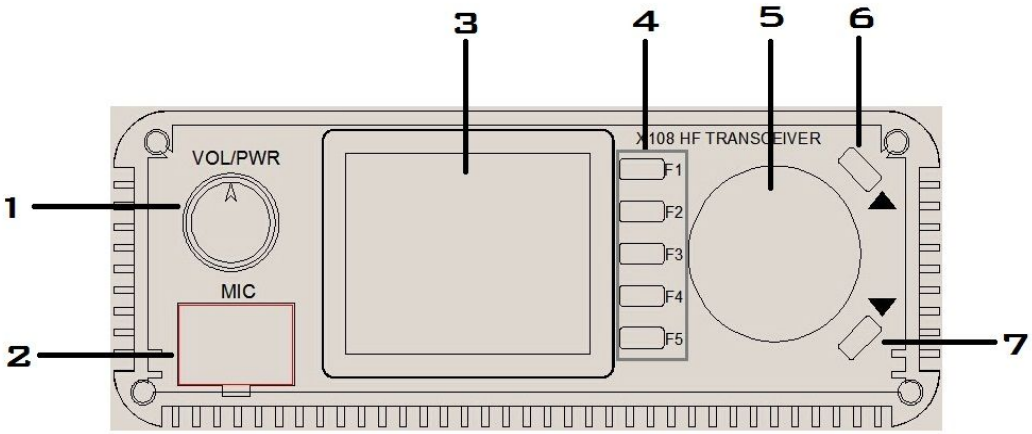
Dynamic range: Better than 95db

RIT Frequency control range: ±1kHz

audio output: 0.5W@8Ω

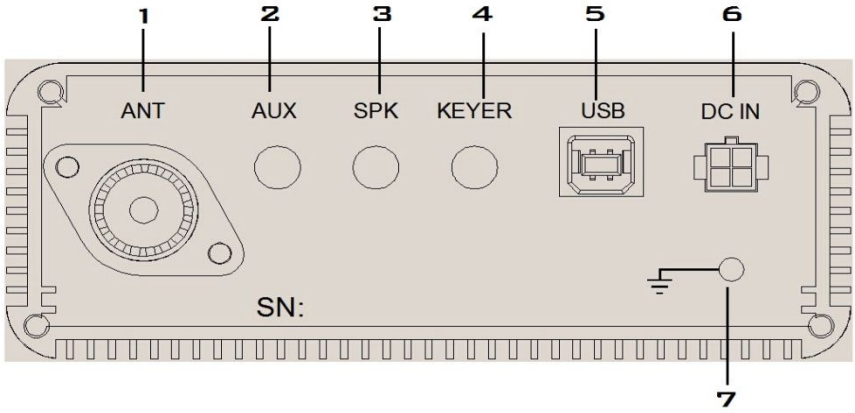
二、 Description of equipment

2.1 Front panel Description



1. **Power switch/ Volume knob**
2. **Hand microphone socket**
3. **Display screen**
4. **Multifunction key**
5. **Frequency knob**
6. **UP key**
7. **DOWN key**

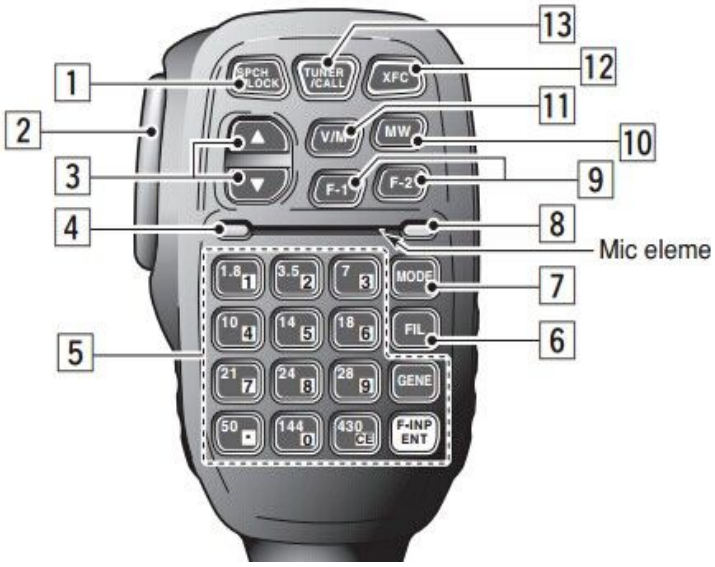
2.2 Rear panel Description



1. SO-239 Antenna Jack.
2. Audio input / PTT input.
3. Audio output.
4. CW key input.
5. USB port.
6. DC power input.
7. Ground connection.

2.3 Microphone

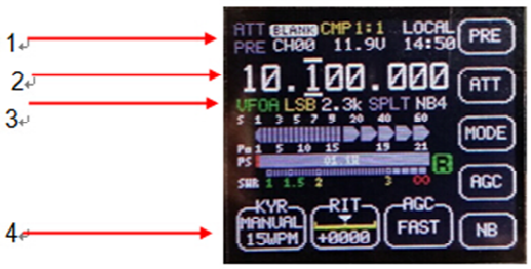
1. Lock button/ Press it unlock again
2. PTT button
3. Up / Down frequency/channel
4. Receiving indicator
5. Multifunction
6. Filter selection buttons
7. Mode selection button
8. No indication
9. No function
10. Memory write button
11. Frequency/Channel switching button
12. VFO-A / VFO-B switching button
13. No function



三、 Operating instructions

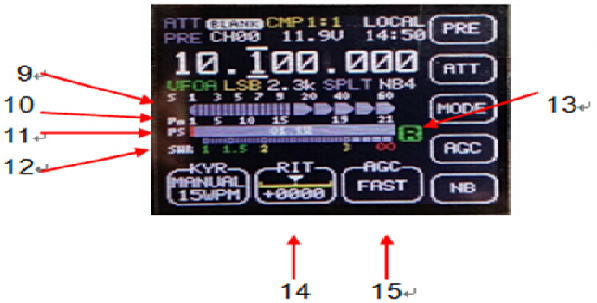
3.1 Screen displays instructions

1、Preamplifier / Pre-attenuator current status
2、Current settings for frequency information
3、VFO current status、Operating mode、
Split frequency transceiver status、
Filter bandwidth、NB current status
4、select keyer – Manual/Auto L/Auto R.



5、Channel
6、Voice compression ratio / Host Input Voltage
7、Local time
8、Multifunctional menu

9、S-Meter
10、Real-time power meter
11、Setting Power value
12、VSWR-meter
13、Receive and Transmit current status
14、Frequency control display
15、AGC State display



3.2 *Menu Functions:*

【PRE】Switch receive preamp on or off.

【ATT】Switch receive signal attenuator on or off.

【MODE】Select desired operating mode – CW/AM/LSB/USB.

【AGC】 Select AGC level – FAST/SLOW/OFF.

【NB】 Select NB level between 1 and 4.

【A/B】 Switch between VFO A & VFO B.

【A=B】 Set VFO A the same as VFO B.

【SPLT】 Select SPLIT operating mode.

【RIT】Select RIT mode – adjust via selector knob B, setting shown on RIT display in LCD.

【POW】 Set RF output power – adjust via selector knob B, level displayed via red line in LCD.

【V/M】*Select VFO or Memory mode. Select channel/frequency using selector knob B.*

【M>V】*In memory mode, move current frequency to VFO and switch to VFO mode.*

【MW】*In VFO mode, store current frequency and settings in memory.*

【MC】*In memory mode, clear selected memory channel.*

【BW】*Select Bandwidth – 0.5/2.2/15 kHz.*

【KEY】*Select keyer – Manual/Auto L/Auto R.*

【KSPD】*Select keying speed - adjust via selector knob B, speed displayed under KEY in LCD.*

【TIME】*Set Internal Clock – adjust via selector knob B, select hour/minute with Up/Down buttons.*

【SQL】*Select to adjust Squelch level via selector knob B, level shown on line display in LCD.*

【*VCMP*】*voice compression settings*

3.3 Functions Operating Instructions

3.3.1: Set the current operating frequency

Method 1: Press the front panel UP / DN button, move to the desired frequency step-bit bit, then rotate the frequency knob to change the current frequency value.

Method 2: On the multifunction digital microphone in hand, Press

and then enter the frequency directly, such as: 14.27
then press the F-INP ENT button again to complete the frequency settings.

3.3.2: Mode Switching

Method 1: Press the frequency knob to switch the current menu page, then press [MODE]. Press corresponding multifunction button, to complete mode switching.

Method 2: On the multifunction digital microphone in hand, press

to complete the mode switching.

3.3.3: *Filter Switching*

Method 1: Press the frequency knob to switch the current menu page, then press [BW]. Press corresponding multifunction button to complete filter switching.

Method 2: On the multifunction digital microphone in hand, press

to complete filter switching.

3.3.4: Preamplifier on/off

Press the frequency knob to switch the current menu page, then press [PRE].

When the preamplifier is on, PRE will be highlighted green. When the preamplifier is off, PRE will appear dark.

3.3.5: Attenuator on/off

Press the frequency knob to switch the current menu page, then press [ATT].

When the attenuator is on, ATT will be highlighted green. When the attenuator is off,

ATT will appear dark. The attenuator provides 10 dB attenuation.

3.3.6: Automatic Gain Control on/off

Press the frequency knob to switch the current menu page, then press [AGC].

AGC options are Fast or Slow with the screen showing the current status. Press [AGC] again to exit.

3.3.7: Noise Blanker on/off (if equipped)

Press the frequency knob to switch the current menu page, then press [NB]. The Noise Blanker offers depth of NB1 thru NB4, with the screen showing the current status.

3.3.8: Switching between VFO-A / VFO-B

Press the frequency knob to switch the current menu page, then press [A/B]. You can toggle between VFO-A and VFO-B.

3.3.9: Set both VFO's to the same settings

Press the frequency knob to switch the current menu page, then press [A=B]. The settings of the current VFO will transfer to the second VFO.

3.3.10: Split frequency operations

Press the frequency knob to switch the current menu page, then press [SPLIT].

The radio will receive on VFO-A and transmit on VFO-B.

3.3.11: RIT tuning

Press the frequency knob to switch the current menu page, then press [RIT].

Turning the frequency knob will change the receive frequency but leave the transmit frequency unchanged. Pressing [RIT] again will exit this mode.

3.3.12: Transmit power setting

Press the frequency knob to switch the current menu page, then press [POW].

The on-screen power status will be highlighted. Rotate the frequency knob to select the

desired power setting and press [POW] to exit.

3.3.13: Switching between Frequency Mode / Channel Mode

Press the frequency knob to switch the current menu page, then press [V/M].

Press this function key to move between frequency mode and channel mode.

3.3.14: Move current channel to VFO

Press the frequency knob to switch the current menu page, then press [M>V].

The radio will switch to VFO mode, showing information from the current channel.

3.3.15: Save current settings to Memory

Press the frequency knob to switch the current menu page, then press [V/M] to choose channel mode. Turn the frequency knob until “BLANK” is highlighted.

Press [V/M] to return to frequency mode. Adjust frequency, operating mode and other parameters desired, then press [MW] to write this information to memory.

3.3.16: Delete the current channel

Press the frequency knob to switch the current menu page, then press [MC] to clear the information stored in the current channel.

3.3.17: Manual / automatic telegraph key

Press the frequency knob to switch the current menu page, then press [KEY].

Choose Manual Key, Automatic Left Hand telegraph key or Automatic Right Hand telegraph key.

3.3.18: Automatic telegraph key rate

Press the frequency knob to switch the current menu page, then press [KSPD].

Turn the frequency knob to set the automatic key rate.

3.3.19: Set the local time

Press the frequency knob to switch the current menu page, then press [TIME].

Then press the corresponding number keys on the microphone to set the local time.

3.3.20: Setting squelch level

Press the frequency knob to switch the current menu page, then press [SQL].

Turn the frequency knob to set the squelch depth. Press [SQL] again to save the squelch setting and exit.

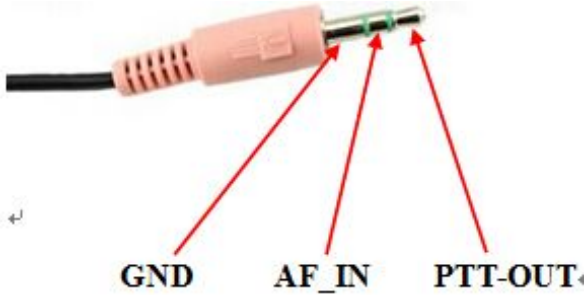
3.3.21: Set voice (speech) compression ratio

Press the frequency knob to switch the current menu page, then press [VCMP]. Adjust the compression ratio as desired.

3.4 Extended Interface

【ANT】*Antenna 50 ohms*

【AUX】Auxiliary; PTT/Audio Input

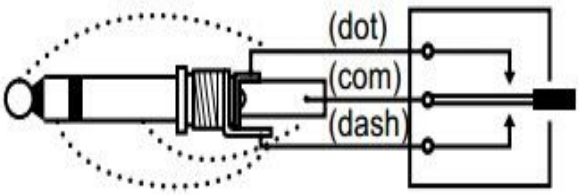


PTT output voltage status:

RX=0V; TX=5V

【SPK】Speaker or Headphone(3.5 stereo Socket); Otherwise it will damage the rig. Before using the headphone, please decrease the volume.

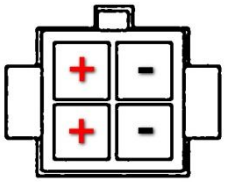
【KEYER】Telegraph Key



The telegraph key is automatic and manual integration. You can switch in the menu.

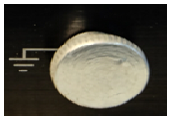
【USB】PC control or firmware update

【DC IN】 11-14.5 v DC input



【Ground hole】

【Ground screw】



3.5.Advanced Menu Settings

CAUTION: THESE SETTINGS ARE DIRECTLY RELATED TO THE CORRECT OPERATION OF THIS RADIO. PLEASE EXERCISE CAUTION. PLEASE RECORD AND SAVE ALL ORIGINAL FACTORY SETTINGS BEFORE MAKING ANY ADJUSTMENTS.

To enter menu setting mode: Power off radio. Press and hold F1 button while powering on.

1. IF SSB: SSB IF
2. IF CW: CW IF
3. BFO LSB: BFO value LSB mode
4. BFO USB: BFO value USB mode
5. BFO CW: BFO value of the CW mode
6. CW Tone: CW side tone pitch frequency adjustment
7. CW TDly: CW launch delay
8. TOT:
9. Britns:
10. DDSCLK: System Clock
11. DCLKx6: DDS multiplier settings
12. System Audio Settings

Item 1 to 5, cannot be freely modified, otherwise it will lead to the transceiver exception or even not work.

Item 6, for CW Receiving side tone pitch adjustment. Users can according to their preferences and habits, adjusting CW side tone.

Item 7, for CW transceiver delay. Users can operate according to their own habits, appropriate changes this parameter to match the transmitters speed.

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